

IN THE CLAIMS:

Please withdraw claims 6 and 7. Please add new claim 16. All pending claims are reproduced below.

1. (Previously cancelled.)

2. (Previously cancelled.)

3. (Previously cancelled.)

4. (Previously cancelled.)

5. (Previously cancelled.)

6. (Withdrawn.) A method for processing instructions in a parallel processor architecture having local processing machines coupled to local addressing machines and local memory, and the addressing machines are identified by unique geographic identifications and are interconnected through an interconnection unit, comprising the steps of:

receiving a program instruction

determining if the received program instruction requires a remote operation;

responsive to a remote operation being required, storing remote component information into local memory; and

issuing an imperative to the local addressing machine to initiate the remote operation.

7. (Withdrawn.) The method of claim 6 wherein the addressing machine performs the steps of:

receiving an imperative from the local processing machine;

retrieving remote component information from the local memory, wherein the remote

component information comprises a local geographic address, a remote geographic address, and a remote local memory address;

generating a meta-address responsive to the retrieved remote component information;
generating a data packet responsive to the generated meta-address; and sending the data packet to the interconnect unit.

8. (Original.) A method for addressing memory in a parallel computing environment in which local processing units are coupled to local memory, local addressing machines, and an interconnect unit, the addressing machine performing the steps of:

receiving a data packet;
decoding the data packet into a geographic address and a local address;
comparing the geographic address to an associated geographic address; and
responsive to the geographic address matching the associated geographic address,
transmitting the data packet to the local processor.

9. (Original.) The method of claim 8 wherein the step of transmitting the data packet to the local processor further comprises the step of storing the data packet in a queue for processing by the local processor.

10. (Original.) The method of claim 8 further comprising the steps of:
receiving data from the local processor;
retrieving remote operation data from the local memory responsive to the received data;
generating a meta-address from the retrieved data;
generating a data packet responsive to the generated meta-address; and transmitting the data packet to the interconnect unit.

11. (Original.) The method of claim 10 wherein retrieving remote operation data comprises retrieving a remote geographic address and a remote local memory address.

12. (Original.) The method of claim 11 further comprising retrieving a source geographic address from local memory.

13. (Original.) The method of claim 12 in which architecture description memory is coupled to each processor and stores a geographic address for the local processor to which it is coupled, further comprising retrieving a source geographic address from architecture description memory.

14. (Original.) A method for processing instructions in a parallel processor architecture having local processing machines coupled to local addressing machines and local memory, and the addressing machines are identified by unique geographic identifications and are interconnected through an interconnection unit, comprising the steps of:

receiving an imperative from the local processing machine;

retrieving remote component information from the local memory, wherein the remote

component information comprises a local geographic address, a remote geographic address, and a remote local memory address;

generating a meta-address responsive to the retrieved remote component information;

generating a data packet responsive to the generated meta-address; and sending the data packet to the interconnect unit.

15. (Original.) A method for addressing memory in a parallel computing environment in which local processing units are coupled to local memory, local addressing machines, and an interconnect unit, the addressing machine performing the steps of:

receiving data from the local processor;

retrieving remote operation data from the local memory responsive to the received data;

generating a meta-address from the retrieved data;

generating a data packet responsive to the generated meta-address; and transmitting the data packet to the interconnect unit.

16. (New.) The method of claim 8 further comprising the steps of:

receiving data from the local processor;

retrieving remote operation data from the local memory responsive to the received data;

generating a meta-address from the retrieved data;

generating a data packet responsive to the generated meta-address;

and transmitting the data packet to the interconnect unit.

17. (New.) A method for addressing memory in a parallel computing environment in which local processing units are coupled to local memory, local addressing machines, and an interconnect unit, the addressing machine performing the steps of:

receiving a data packet;

decoding the data packet into a geographic address and a local address; and

generating a meta-address from the data packet.